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10-17-2005
Date

Joanne Bourguignon

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Vale Sundaravel et al.
Application No.:	09/863,538
Filed:	May 23, 2001
Title:	Geographical Comparison system and Method
Examiner:	Abdulhakim Nobahar
Art Unit:	2132
Docket No.:	35014.094
Date:	October 17, 2005

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RESPONSE TO NOTICE OF NON-COMPLIANT AMENDMENT (37 CFR 1.121)

Sir:

In response to the Notice of Non-Compliant dated September 30, 2005, please include the complete listing of all claims in the Amendment filed September 21, 2005, as follows:

AMENDMENTS TO THE CLAIMS

81. (original) A method for comparing a first location and a second location, the method comprising,

generating a first binary representation from geographic information based on the first location,

generating a second binary representation from geographic information based on the second location,

associating an uncertainty with at least one of the first binary representation and the second binary representation,

bitwise comparing the first binary representation and the second binary representation, and,

associating an uncertainty with the bitwise comparison.

82. (original) A method according to claim 81, wherein an uncertainty associated with the first binary representation is based on the geographic information based on the first location.

83. (original) A method according to claim 81, wherein an uncertainty associated with the second binary representation is based on the geographic information based on the second location.

84. (original) A method according to claim 81, where the uncertainty associated with the bitwise comparison is based on the uncertainty associated with at least one of the first binary representation and the second binary representation.

85. (original) A method according to claim 81, further including:

associating the bits of the bitwise comparison to derive a distance measure.

86. (original) A method according to claim 81, further including,

encrypting at least one of the first binary representation and the second binary representation,

and wherein performing a bitwise comparison further includes performing a bitwise comparison of at least one of the encrypted first binary representation and the encrypted second binary representation.

87. (original) A method according to claim 81, further including,

receiving a criteria, and

comparing the bitwise comparison to the criteria.

88. (original) A method according to claim 81, further including,

receiving a criteria, and

comparing the distance measure to the criteria.

89. (original) A method according to claim 81, further including,

receiving a probability threshold, and,

comparing the bitwise comparison to the probability threshold.

90. (original) A method according to claim 89, where the probability threshold is at least one of a constant probability threshold and a variable probability threshold.

91. (original) A method according to claim 81, wherein performing a bitwise comparison includes computing an exclusive OR operation.

92. (original) A method according to claim 81, wherein generating a first binary representation includes generating a first binary code based on at least one of latitude, longitude, direction, parcel, ward, street address, town, city, zip code, telephone number, area code, destination, and directional information.

93. (original) A method according to claim 81, wherein generating a second binary representation includes generating a second binary code based on at least one of latitude, longitude, direction, parcel, ward, street address, town, city, zip code, telephone number, area code, destination, and directional information.

94. (original) A method according to claim 86, wherein encrypting at least one of first binary representation and the second binary representation includes altering the precision of at least one of the first binary representation and the second binary representation.

95. (original) A method according to claim 81, where the first uncertainty is based on the accuracy of the first geographic information.

96. (original) A method according to claim 81, where the second uncertainty is based on the accuracy of the second geographic information.

97. (original) A method according to claim 81, where at least one of the first binary representation and the second binary representation include a token.

98. (original) A method according to claim 97, further comprising providing a database of tokens.

99. (original) A method according to claim 97, further comprising categorizing the token.

100. (original) A method according to claim 81, further comprising associating an identity with at least one of the first binary representation and the second binary representation.

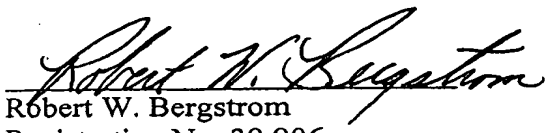
Claims 101 – 107 cancelled

REMARKS

In the Notice of Non-Compliant dated September 30, 2005, the Examiner requested that a complete listing of all claims be presented. Applicants' representative has included a complete listing of all the claims, which includes pending claims 81-100 and canceled claims 101-107.

The application is now clearly in order for allowance.

Respectfully submitted,
Vale Sundaravel et al.
Olympic Patent Works PLLC



Robert W. Bergstrom
Registration No. 39,906

Enclosures:
Postcard
Transmittal in duplicate

Olympic Patent Works PLLC
P.O. Box 4277
Seattle, WA 98194-0277
206.621.1933 telephone
206.621.5302 fax

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Sept. 21, 2005 — Date

Joanne Bourguignon

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Application No.:	09/863,538
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AMENDMENT

INTRODUCTORY COMMENTS

Sir:

In response to the Office Action date March 21, 2005, please extend the time to respond three–months, from June 21, 2005 to September 21, 2005. The Petition for Extension of Time and requisite fee is enclosed. Please amend the application as follows:

AMENDMENTS TO THE CLAIMS

Please cancel claims 101-107, without prejudice, should Applicants choose to pursue these cancelled claims in a divisional application.

REMARKS

Claims 81-100 are currently pending in the application. Applicants' representative confirms the election of Group I, claims 81-100. In the Office Action dated March 21, 2005 ("Office Action"), the Examiner rejected claims 81-85, 87-89, 92, 93, and 95-100 under 35 USC § 102(e) as being anticipated by Lampert et al., U.S. Patent No. 5,953,722 ("Lampert"), rejected claim 86 under 35 U.S.C. § 103(a) as being unpatentable over Lampert in view of Eschenbach et al., U.S. Patent No. 6,181,253 ("Eschenbach"), rejected claim 91 under 35 U.S.C. § 103(a) as being unpatentable over Lampert in view of Ross et al., U.S. Patent No. 5,903,653 (Ross"), and conditionally allowed claims 90 and 94. Applicants' representative would like to thank the Examiner for the conditional allowance of claims 90 and 94, but defers rewriting those claims until the Examiner has considered the following arguments. Applicants respectfully traverse the 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a) rejections below.

Claim 81 is provided, below, for the Examiner's convenience:

> 81. (original) A method for comparing a first location and a second location, the method comprising,
> generating a first binary representation from geographic information based on the first location,
> generating a second binary representation from geographic information based on the second location,
> associating an uncertainty with at least one of the first binary representation and the second binary representation,
> bitwise comparing the first binary representation and the second binary representation, and,
> associating an uncertainty with the bitwise comparison.

Claim 81 claims a way for comparing a first location and a second location involving generating binary representations of the first and second locations, bitwise comparing the binary representations, and associating an uncertainty with the bitwise comparison.

Lampert, by contrast, describes a complex geographic database that includes data entities, each data entity associated with a data entity ID, and the data entities indexed, for searching, by a separate *kd*-tree (Lampert, column 2, lines 43-67

and column 3, lines 1-10.) A *kd*-tree is a complex, acyclic graph, also referred to as a *k*-dimensional balanced tree, in which points in space may be partitioned, each level of the *kd*-tree represents partitionings of the points with respect to splitting planes orthogonal to one dimension.

The Examiner incorrectly states that, in the passage of column 21, lines 10-57, Lampert discloses assigning IDs to the geographic locations of entities. In fact, Lampert states, on lines 2-3 of column 21, that each data entity ID uniquely identifies an entity record in the geographic database and can be used to refer to a particular data record. The data entities are not geographic locations, but are, instead, database records that describe geographic locations. Furthermore, the rather complex process for assigning ID's to data entities, described in the passage of column 21, lines 10-57, does not produce entity IDs that can be directly compared to obtain a distance or uncertainty. Instead, the IDs are assigned to data entities within parcels based on the order in which parcels are formed. (Lampert, column 21, lines 63-64) Within parcels, the IDs are assigned segment-by segment, in order to have a binary search property (Lambert, column 21, lines 22-27).

The Examiner next states that Lampert discloses "a range is defined ... for each data related to the geographic locations." Applicants' representative does not understand what the Examiner is referring to, or how this in any way relates to the claimed subject matter. The cited text of column 2, lines 55-61 refers to ranges of IDs associated with a parcel, the point being that the range of IDs used to identify data entities of one parcel does not overlap the range of IDs used to identify data entities relevant to another parcel. Lampert in no way suggests that IDs are directly compared in order to compare geographic locations, or to obtain an uncertainty or distance with respect to geographic locations. The IDs are not assigned in a fashion to make this possible. No assignment of scalers to areas would allow distance to be inferred by a bitwise comparison of the scalers. Instead, for 2-dimensional areas, a 2-dimensional vector, or coordinate pair, would need to be assigned to locations, such as the assignment of coordinate pairs in a familiar *xy* graph of a one dimensional function $y = f(x)$, in order to provide for determination of distances or uncertainties from the vectors or coordinate pairs. The cited text of column 27, lines 25-40 describes searching a *kd*-tree to identify a range of IDs associated with data entities of a given parcel or segment. Searching a *kd*-tree is not a bitwise comparison, and the result is

not a distance or uncertainty with respect to geographic locations. Instead, the result is a range of IDs that reference data entities in a database.

The Examiner next refers to passages at column 6, lines 42-65, column 28, lines 1-20, column 29, lines 55-65, and column 30, lines 20-40 as teaching "that for finding a location the position information, which is in bits, is compared to the geographic information of a reference position/location." Again, Applicants' representative confesses to not understanding how these passages relate to the claimed invention. The first of these passages discusses organizing data in layers to minimize the number of segments to be investigated when calculating routes. This has nothing whatsoever to do with computing a distance or uncertainty from two binary representations of geographic locations. This passage also describes a fairly complex algorithm related to the layered data organization, which clearly has no relation to bit-wise comparison of two binary representations. The second of these passages discusses searching a *kd*-tree to locate a parcel. The *kd*-tree search involves many complex operations, is not even remotely related operationally or algorithmically related to bitwise comparison of two binary representations of geographic locations, and does not produce a distance or uncertainty. The third of these passages discusses finding a parcel using a kd-tree. Like the first passage, this passage is wholly unrelated to bitwise comparing of two binary representations of geographic locations in order to obtain a distance or uncertainty. The last of these passages discusses saving position and location data related to segments in a list, and then using the saved information to perform a spatial search using the *kd*-tree. Like the first passage, this is wholly unrelated to bitwise comparing of two binary representations of geographic locations in order to obtain a distance or uncertainty.

Applicants' representative respectfully submits that nothing cited in Lampert bears any similarity or relationship to the invention claimed in claim 81, provided above. The Examiner's 35 U.S.C. § 102(e) of claim 81 is unfounded. Claim 81 is not anticipated by, nor even related to, Lampert. The remaining claims depend from claim 81, and are therefore also not anticipated by Lampert. Because the Examiner's 35 U.S.C. § 103(a) rejections primarily rely on Lampert, and misstate Lampert's teaching, they too are unfounded, and must fail.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
Vale Sundaravel et al.
Olympic Patent Works PLLC

_____
Robert W. Bergstrom
Registration No. 39,906

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Transmittal in duplicate

Olympic Patent Works PLLC
P.O. Box 4277
Seattle, WA 98194-0277
206.621.1933 telephone
206.621.5302 fax